UNIVERSITY OF WORCESTER

RESEARCH AND KNOWLEDGE EXCHANGE
2020-2025

INSPIRED FOR LIFE

University
of Worcester
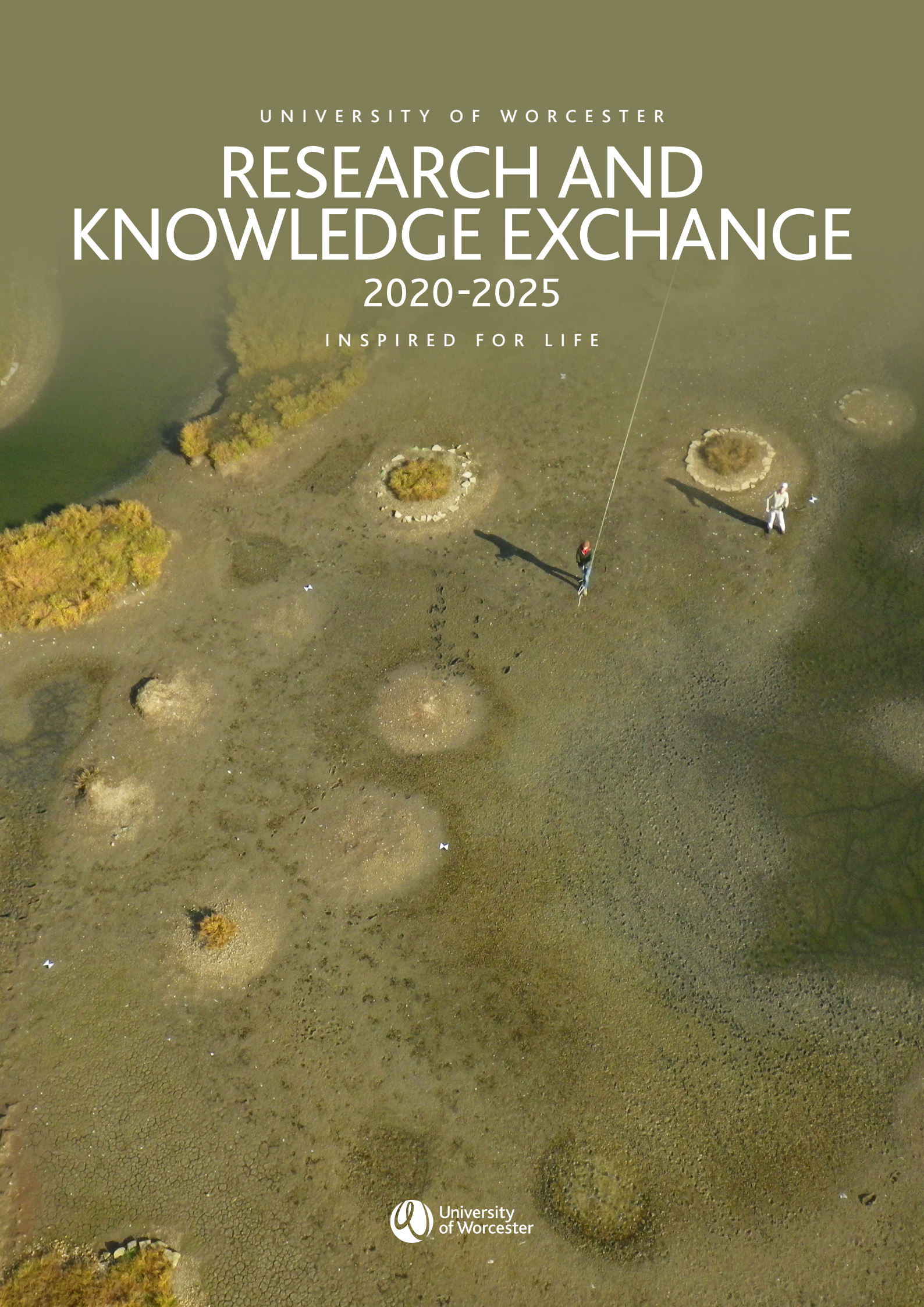
Research and Knowledge Exchange (RKE) are fundamental to the University's overall mission. We believe that Higher Education should have a transformative impact on individuals and on society as a whole and our RKE is at the heart of this belief.

WE ENGAGE IN RESEARCH:

- To extend the boundaries of human knowledge
- To better understand the challenges facing society, nationally and globally, and to meet with these challenges
- To provide solutions to real world issues for businesses, public and voluntary sector organisations, and communities
- To enhance our learning & teaching
- To inform our knowledge exchange.

WE ENGAGE IN KNOWLEDGE EXCHANGE:

- To share our research and the expertise and knowledge of our staff (academic and professional) and of our students beyond academia
- To learn from people and organisations outside of academia
- To inform our ongoing research
- To inform our learning and teaching
- To enhance and enable the impact of our research.

COVER IMAGE: View from a drone of an inland saltmarsh at Upton Warren, Worcestershire. These images enable our researchers to map the submerged topography of the saltmarsh and so inform the environmental management of these important habitats.
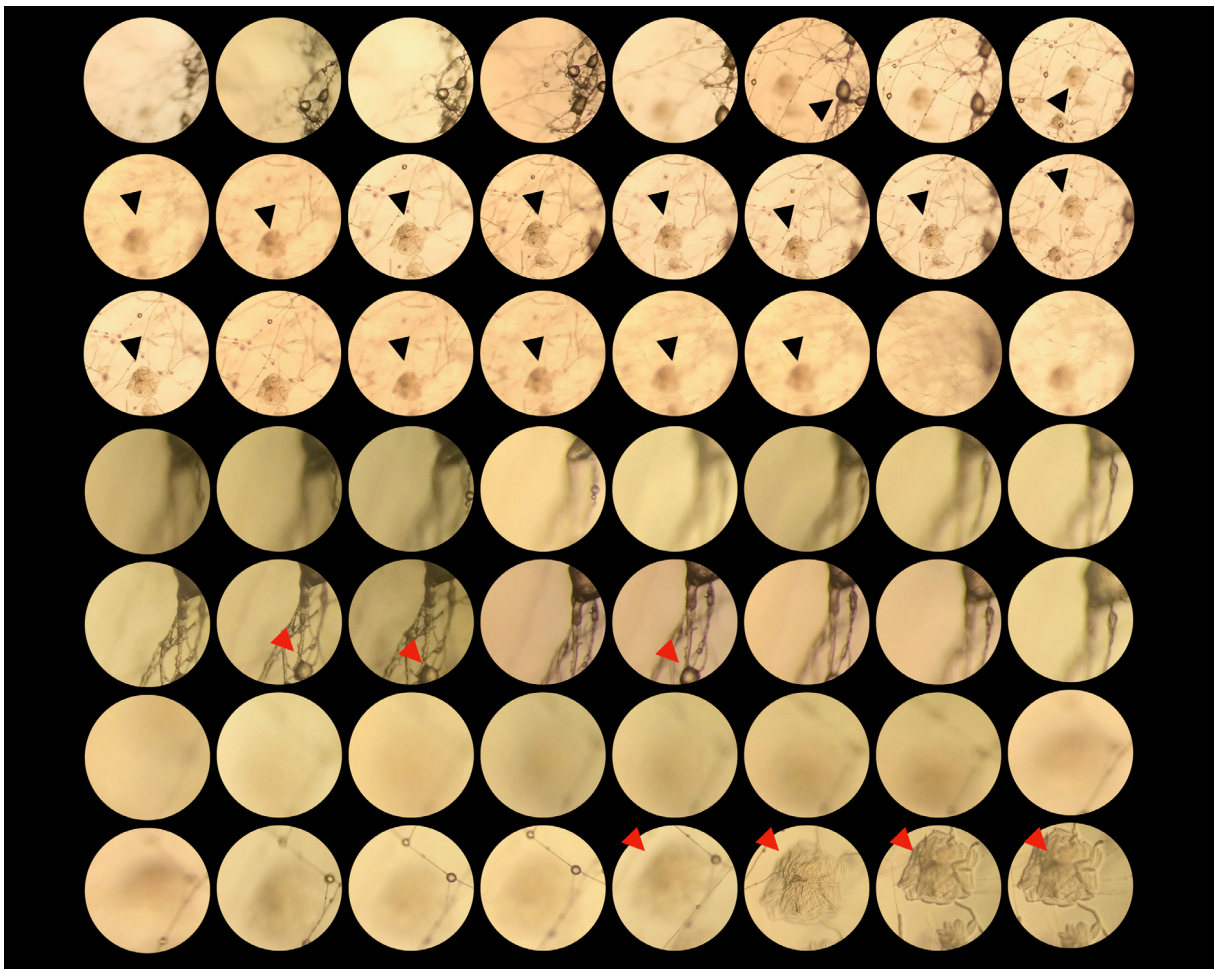
Close up images of Fusarium graminearum, a fungal microorganism which causes head blight disease in wheat, barley and other grass species, showing the reproductive propagules that allow the dispersion of the plant pathogen.

Vision

We will be recognised for delivering excellent Research which extends the boundaries of human knowledge, but which also fundamentally improves people's lives and makes the world in which we live a better place.

And for high-quality Knowledge Exchange which meets the needs of our clients, partners and communities and adds value to their organisation.

We will be particularly recognised for our Research and Knowledge Exchange in identified Areas of Challenge.

Areas of Challenge

These Areas of Challenge reflect many of the fundamental problems and issues facing the world today.

They highlight global, national and, indeed, regional and local concerns which Research and Knowledge Exchange can help to address: through enabling better understanding of these problems and issues; through informing policy and practice relating to these matters; through working with people and communities affected by these problems, and with businesses, public sector and voluntary sector organisations to develop and implement specific solutions.

Many of our existing Research Centres and Groups fit well within these Areas of Challenge and we have particular strengths in the areas of "Human Health and Wellbeing" and "Sustainable Futures". We will continue to strengthen and enhance our RKE in these areas but we will also develop our strengths across all Areas of Challenge.

Human Health and Wellbeing

We are faced with a growing number of health challenges, nationally and globally. With an ageing population and increasing numbers of people living with long-term conditions, traditional health and social care models in the UK have faced increasing pressure. This has provided opportunities to innovate and develop new ways of working across the lifespan.

Individuals are being afforded more control over their own health, and demand for personalised, often digitally enhanced, care is increasing. Initiatives to reduce health inequalities are essential to help people to live well for longer, regardless of their age, location, or diagnosis. Action to reduce rates of smoking, obesity, alcohol use, air pollution and antimicrobial resistance is vital. There will be further attention placed on care quality and outcomes, including services for children and young people, as well as better care for those living with major health conditions such as adult mental ill-health, dementia, cancer, cardiovascular disease, respiratory disease, diabetes and stroke.

Trauma is a major contributor to mental and physical illness in both the general ageing population as well as among the health and social care workforce. As such, action is required to better understand these pathways with a view to developing preventative approaches, and to ensure that our health and social care workforce are equipped with the skills and support needed to meet these increasing demands.

Research has a key role to play in meeting the health and social care challenges of the 21st century. Collaboration is key, bringing together academics, clinicians, patients and the general public, to design, conduct and disseminate research with the potential to make a difference.

Sustainable Futures

The future of the planet is in the balance. Our negative impact on climate and the environment is now largely accepted by scientists and recognised by the public, if not always fully understood. In the global drive to reverse our impact on the environment, Research and Knowledge Exchange can offer solutions to some seemingly intractable problems as well as aiding organisational and public understanding.

Sustainability is a major issue in agricultural production. How do we ensure food security in developing countries whilst protecting the environment? How do we limit the use of pesticides in crop protection without impacting on profitability? However, this challenge extends beyond food systems into broader issues of sustainability and resilience within organisations and across the general population. How do we understand, limit and reverse the impact of climate change on the environment? How do we develop sustainable businesses and business processes to drive forward environmentally conscious policies whilst enabling business

growth and maintaining profitability? How do we increase public understanding of climate change?

Meeting these challenges requires basic research, examining, for example, the genetics and molecular biology of plant-pathogen interactions. It requires applied Research and Knowledge Exchange which engages directly with farmers and leads to the development of on-the-ground strategies for conservation management. It also requires multi- and cross-disciplinary approaches that brings together plant scientists, ecologists, atmospheric scientists, geographers, psychologists, sociologists, business and management researchers and educators to address the overarching challenge of securing our own and the planet's future.

Digital Innovation

Digital technologies offer solutions to a wealth of the world's problems, not least in the spheres of health and wellbeing, business growth and development, criminal justice, and education. Digital technologies are also key to the continuing successes of the creative and media industries in the UK.

Artificial Intelligence (AI) technology, harnessing big data sets, may offer opportunities for earlier detection of health conditions. Digital initiatives can provide new ways to connect people with health and social care professionals. Assistive technologies and devices can enable people to live independent and dignified lives, reducing their need for long-term care. Technology can shape the future of production across all sectors whilst AI offers a range of solutions to enable businesses to prioritise strategic work. Technology can be harnessed to monitor those at risk of

offending, or victimisation, and can play a key role in public protection and supporting desistance from crime. AI further offers a range of solutions to enable businesses to prioritise strategic work. Technology can also provide new ways to share and develop knowledge both through traditional and new contexts for education.

Research and Knowledge Exchange can enable the development of new technologies but can also find the best ways in which technologies, new and old, can be tested, developed and implemented in a wide variety of settings working closely with businesses who might have created or co-created the tech and with the end users of this technology.

Such technologies, however, also bring with them significant ethical issues and moral dilemmas. Researchers will be key in identifying and addressing such issues both in the development and use of technology.

Culture, Identity and Social Exclusion

National, social, cultural and personal identities are constantly shifting and developing in the 21st century, a product of specific geo-political events (such as Brexit), of fundamental cultural shifts, of global conflict, and of the development of technologies and new media which challenge notions of self. The importance of knowledge of the past, of our heritage, in understanding our identity cannot be underestimated; however, equally important are finding ways to shape the culture of the future - how do we reflect and express our identities, and how do we safeguard our ability to express and protect our identities in our ever-changing world.

Yet, there remains a fundamental lack of diversity in many walks of life, nationally and globally, as old and new identities remain marginalised. The challenge to increase diversity is a significant one and requires a thorough understanding of the fundamental problems but also the development of inclusive practices that can begin to address these problems.

Professional Education

Nationally, we are faced by shortages in key professions – most notably doctors, nurses and other professions allied to health – but also by rapid attrition in other areas such as teaching and social work, where people who have spent years qualifying for these jobs quickly leave the profession, unhappy and disillusioned. In other professions, such as business and management and sports coaching, there are challenges to increase knowledge and understanding of issues such as sustainability and social exclusion.

Research and Knowledge Exchange can inform the development of the curriculum for these key professions, attracting more students and creating work-ready graduates who understand the challenges of their chosen profession and are ready to meet them; but Research and Knowledge Exchange can also support the continued development of these professionals and shine a light on the challenges they face in their roles offering solutions that limit attrition.

Our researchers investigating the environmental benefits of using wildflower strips in Spanish orange orchards.

THESE AREAS OF CHALLENGE REFLECT MANY OF THE FUNDAMENTAL PROBLEMS AND ISSUES FACING THE WORLD TODAY.

Delivering
our vision

To deliver on our vision we will focus on five key components of our RKE environment. For each of these five components we have identified three core objectives which we believe are fundamental to Enabling Excellence and Maximising Impact of our RKE.

People

1. We will seek to recruit and retain excellent researchers at all career stages but with a particular focus on attracting the next generation of researchers and research leaders to the University.

2. We will seek to increase the number of Postgraduate Research (PGR) students in identified areas recognising that they are fundamental to a rich, vibrant and sustainable research culture.

3. We will develop and mentor researchers across their research careers (from PGR to Professor).

Infrastructure

1. We will develop a sustainable infrastructure for our research through appropriate internal investment and through winning external funding.

2. We will extend our professional support structures at the University to further enhance the quality of our RKE and enrich the research culture.

3. We will seek to establish at least one Centre of Excellence for RKE in each of the identified Areas of Challenge.

Culture

1. We will develop and support Research Groups and Networks within and across academic Schools, recognising these as the principal context in which research is discussed, produced and valued.

2. We will encourage research, which is multi-, cross- and inter-disciplinary, whilst recognising the continued importance of mono-disciplinary work.

3. We will ensure that our RKE informs and inspires our learning and teaching at all levels and that our students have opportunities to work alongside our excellent researchers.

Collaboration

1. We will extend links with HEIs, nationally and internationally, in order to develop research capability, research opportunities and knowledge exchange to mutual benefit.

2. We will broker regional, national and international partnerships with policymakers and policy influencers (e.g. local authorities, LEPs, health and education bodies, NGOs) that support our RKE mission.

3. We will establish and further develop existing links with research user groups, including public services, not-for-profit organisations and businesses, and engage these groups in the co-creation of research.

Engagement

1. We will enhance and develop existing structures, resources and training to support staff and students to engage public and community in their RKE.

2. We will improve how public engagement is co-ordinated across the University to maximise opportunities and effectiveness, enhance communication, create new research and teaching opportunities and raise our profile.

3. We will build an evidence base of how our public and community engagement is making a difference and having an impact.

A practice-based researcher's devised performance explores the horrors of Nazi concentration camps.

Principles Underpinning
Our Strategy

The delivery of our Strategy will be underpinned by 5 key principles. We are committed to:

1. Ensuring our RKE is delivered with integrity and to the highest ethical standards

2. Undertaking RKE with a focus on limiting the environmental impact of our work

3. Embedding equality, diversity and inclusion (EDI) in all aspects of our RKE, as we see EDI as integral to excellence

4. Ensuring our RKE is undertaken in a collaborative, inclusive, supportive, creative and secure environment

5. Developing an Open Research environment.

Implementing our Strategy

Our strategy will be underpinned by an operational plan at University level which will set out in detail how we will meet our core objectives.

This plan will feed into the development of an operational plan for each of our nine academic Schools and, where appropriate, for professional support departments. Progress against the University-level plan and professional support plans will be overseen by the University's Research and Knowledge Exchange Committee. The School-level plans will be overseen by the relevant College Research and Knowledge Exchange sub-Committee. Plans will be reviewed and revised if appropriate on an annual basis.

MEASURING THE SUCCESS OF OUR STRATEGY

Whilst the success of our Strategy will be measured at one level by the progress of its implementation, we have also identified a small number of key metrics which we believe provide a measure of its overall success:

- Performance in REF
- Performance in KEF
- RKE income
- Responsible use of publication metrics
- External recognition of our research environment through e.g. Athena SWAN,
- HR Excellence in Research
- Public and community engagement statistics
- Evaluation of "public benefit" of our RKE.

We will identify our expectations of performance against these metrics in our University-level operational plan and, if appropriate, in School-level plans.

University of Worcester

Research and Knowledge Exchange

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